Abstract:- "Appraisal Report, Badger Springs Unit, Modoc National Forest" by John R. Berry, Logging Engineer, U. S. Forest Service, April 2, 1936

San Francisco

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On October 11, 1928 The Pickering Lumber Company signed an agreement to purchase approximately 400,000 M feet B.M. of government timber in the Badger Springs Unit, Modoc National Forest, Region 5.

This sale was made primarily as a salvage and control measure of the serious pine beetle epidemic in the region. The contract provided that the purchaser would remove or treat the beetle-infested timber on 15,000 acres within the sale area (approximately half government and half private) before June 1, 1929. Each year thereafter, the trees containing winter broods were to be removed from 30,000 acres (approximately half government and half private) when the insect loss during the previous year had been 3% or over.

In order to supply lumber for a new mill at Alturas and to comply with the above clause, a portable mill was constructed near Hackamore, where nearly 2,000 MBM of infested timber was manufactured. At the same time 1,000 m.b.m of infested timber from the remainder of the selected 17,000 acres was treated by burning.

The infestation decreased in 1929 and 1930 to a point where it was believed that control measures were not necessary, and no work was done. At that time the purchasing company went into receivership, and the construction of the Alturas plant was stopped, with the result that no additional timber has been manufactured from the area.

In 1931 the infestation again approaced epidemic conditions, and control was recommended by the Bureau of Entomology. The loss had not reached 3% of the stand, however, and control was undertaken on the basis that the government would pay one-half the cost for work done on government land.

The infestation built up during the summer of 1932, but the preceding year's loss had not reached 3% of the stand, and the 1932-33 winter control was done under a cooperative agreement which provided for the work being done by the government and for the company to make a deposit to pay for the work on private land. Control was stopped in early January because of a sustained period of extreme cold which caused high insect mortality.

During the winter of 1933-34 the government did all of the control work within the areas with one N.R.A. project and one E.C.W. project.

The volume of insect control work within the area and its cost to the government and purchaser are shown in the following table.
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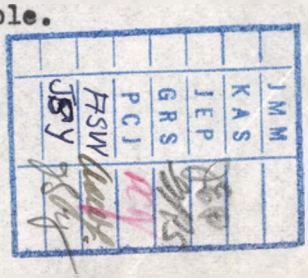

	Government land treated			Private land treated			C O S T	
	Area	Trees	Vol. M ft.	Area	Trees	Vol. M ft.	Govt.	Private
1928-29								
Spotting							633	634
Burning	6,400	1,261	1,072	200	33	28	-	5,012
Logging	2,120	97	83	8,640	1,897	1,789	-	12,315
1931-32	12,160	1,151	1,357	7,520	781	988	2,741	6,737
1932-33	7,040	927	807	1,880	288	256	4,891	1,545
1933-34	17,425	1,897	1,919	9,520	1,671	1,592	15,159	-
E.C.W.	5,410	654	565	8,720	1,586	1,517	14,328	-
Total	50,555	5,987	5,803	36,480	6,256	6,170	37,752	26,243

Dr. K. A. Salman, Associate Entomologist, stated in his report on Forest Insect Surveys, Modoc National Forest, Season of 1934: "Badger Unit: This unit, parts of which were controlled in 1928, 1929, 1931, 1932, and 1933, shows losses that continue to be much greater than the increment which, on one plot, has been determined to be but 38 b.m. per acre per year. It is apparent, in view of the increases on plots controlled in 1933 that, under the enivronmental conditions that have and still are affecting the area, control has little or no effect on the infestation."

On another page he states: "In view of the uncertainty of logging or recuperation, facing the facts of a decadent stand being rapidly depleted, and in spite of the abnormally heavy lossand insect epidemic infestations, no control is recommended. It is recommended, however, that no effort be spared to salvage those values that remain, an operation that, over a large part of the area must take the form of a nearly complete salvage."

In a similar report for 1935, Philip C. Johnson, Junior Forester, states: "A peak in the infestation cycle was reached during the summer of 1935 though the reduction in falll attacks brought the total loss for the year below that of 1934 over most of the area."

This statement is borne out by the results of log grading strips run by the logging engineers in the area during 1935 which indicated a 2% loss during the winter of 1934 and a 3.5% summer loss before August, at which time the summer attack was not sufficiently advanced to show all of the attacked trees.

Because of the expense and doubtful benefits of control, no work has been done since the spring of 1934, but in order that we might start salvage of the whole area, the timber sale agreement with the Pickering Lumber Company was cancelled on August 29, 1935, for non-compliance with the cutting requirements, and an attempt will be made to resell a portion of the area this season.

DESCRIPTION OF TRACT:

The proposed sale is being restricted to the timber in Ts. 44 and 45 N., R. 8 E., and the western tier of sections in T. 44 N., R. 9 E., for two reasons: (1) the heaviest insect infestations are in this area, and (2) the remaining government timber to the south is mostly intermingled with private holdings and should be operated with them.

The area is bounded on the west, south and east by nearly solid private holdings, and on the northwest, north and northeast by open lava flats.

TOPOGRAPHICAL CONDITIONS:

The timber lies chiefly on a nearly flat lava plateau making logging by tractors very simple.

SILVICULTURAL CONDITION:

Around the southeast corner of T. 44 N., R. 8 E., a small amount of cedar is found. The remainder of the area is a pure stand of ponderosa pine. The majority of the timber is overmature, and because of heavy beetle losses is quite scattered over most of the area. Small groups of small thrifty trees and reproduction are scattered over most of the area. In many places even the small thrifty trees have been killed by the beetles.

ESTIMATES:

A five per cent curise was made of this area in 1914. Probably the stand just about held its own until 1921, when the insect infestation first reached epidemic conditions. Since then, the losses have been great.

The Bureau of Entomology began keeping data on beetle losses on this area in 1921 and have since obtained detailed annual loss data on from two to ten 320-acre plots. These results have been presented in annual reports, "Forest Insect Surveys, Modoc National Fores, California." Unfortunately, the forms for reporting the data have been changed a few times, and it is rather difficult to combine the data on the same basis. However, an attempt has been made in the following table to combine the estimated insect losses with growth increment, reported by Kenneth McLees in 1933 and to have been an annual average of .38% from 1925 to 1930, inclusive, on one 320-acre plot in this general region.

It is believed that the table gives a fairly accurate picture of losses on the area. It is assumed that increment equaled losses for the period from 1914, when the area was cruised, to 1921, when collection of loss data was begun.

TABLE SHOWING ESTIMATES OF NET BEETLE LOSS IN BADGER SPRINGS REGION

Year	Feet B.M. per acre: Est. net stand at beginning	Increment .38%	Beetle loss	Net loss	Loss per cent: on current stand	on 1921 stand	on corrected 1928 stand
1921	9,278	35	127	92	.99	.99	
1922	9,186	35	73	38	.41	.41	
1923	9,148	35	35	0	.00	.00	
1924	9,148	35	53	18	.20	.19	
1925	9,130	35	139	104	1.14	1.12	
1926	9,026	34	322	288	3.19	3.10	
1927	8.738	33	1,322	1,289	14.75	13.89	
7 yrs.		242	2,071	1,829		19.71	
1928	7,449	28	891	863	11.59	9.30	11.59
1929	6,586	25	168	143	2.17	1.54	1.92
1930	6,443	24	79	55	.85	.59	.74
1931	6,388	24	183	159	2.49	1.71	2.13
1932	6,229	24	302	278	4.46	3.00	3.73
1933	5,951	23	171	148	2.49	1.60	1.99
1934	5,803	22	402	380	6.55	4.10	5.10
1935	5,423	21	331	310	5.72	3.34	4.16
1936	5.113						
8 yrs.		191	2,527	2,336		25.18	31.36
15 yrs.		433	4,598	4,165		44.89	

As a check against this percentage of net loss, as estimated from the Bureau of Entomology data, calculations have been made which are based upon the data obtained by the logging engineers from log grading strips.

During the late summer of 1927, 18 miles of one-chain strip (143.6 acres) were run for log grading. In addition to the usual log grading data a tally was kept of all standing dead trees; these were assumed to have been beetle-killed since the first heavy infestation in 1921

During August, 1935, approximately 12 miles of this strip were re-run obtaining the same information. Most of the beetle-killed trees tallied eight years before had fallen. A considerable amount of control work had been done since 1927, and the resulting down trees were not tallied. The summer infestation had not sufficiently advanced by the time the 1935 strips were run. For these reasons it is believed that the 1935 tally of standing beetle-killed trees is a conservative estimate of the materila that has been killed on these strips since 1927.

The following table is a compilation of the tally records obtained on these strips in 1927 and 1935.

	Area of strip	1914 cruise	1927 Log Grading Data: Cut volume	Leave volume	Total Green	Killed volume 1920-1927	Total volume on strip	Percent killed	1935 Log Grading Data: Cut volume	Leave volume	Total Green	Killed volume 1927-1935	Total volume on strip	Percent killed
Sec. 2 SW¼ and NW¼	11.3	80,870	70,570	13,930	84,500	20,700	105,200	19.7	31,490	11,090	42,580	41,680	84,260	49.5
" 10 SW¼ and NW¼	11.3	146,510	78,610	7,730	83,340	32,340	118,680	27.2	77,850	13,330	91,180	35,810	126,990	28.2
" 15 S½	8.0	88,330	60,120	7,390	67,510	32,020	99,530	32.2	41,050	12,440	53,480	48,700	102,190	47.7
" 16 N½	9.0	124,880	88,800	3,970	92,770	24,970	117,740	21.2	77,570	9,170	86,740	26,830	113,570	23.6
" 20 SW¼	5.6	82,180	54,560	5,020	59,580	33,690	93,270	36.1	47,300	3,110	50,410	38,400	88,810	43.2
" 19 NE¼	5.6	73,680	44,770	6,990	51,760	15,600	67,360	23.1	48,770	9,240	58,010	29,010	87,020	33.3
" 28 SW¼	5.6	72,910	55,440	5,540	60,980	11,090	72,070	15.4	36,560	7,120	43,680	3,070	46,750	6.5
" 29 NE¼	5.6	95,720	84,270	3,530	87,800	10,650	98,450	10.8	41,930	7,560	49,490	15,070	64,560	23.3
" 33 S½ of NE¼ and N½ of SE¼	3.0	32,080	34,040	7,290	41,330	11,520	52,850	21.8	41,010	3,310	44,320	5,310	49,630	10.7
" 34 S½ of N½ and N½ of S½	8.0	118,930	91,000	12,520	103,520	17,320	120,840	14.3	75,920	13,400	89,320	22,640	111,960	20.2
" 35 S½ of N½ and N½ of S½	8.0	100,450	86,580	8,750	95,330	31,810	127,140	25.0	69,650	5,440	75,090	39,650	114,740	34.6
" 36 E½ of W½ and W½ of E½	8.0	112,900	111,840	9,410	121,250	32,890	154,140	21.3	74,330	8,890	83,220	52,220	135,440	38.6
" 16 S½	8.0	95.550	61,470	9,510	70,980	21,180	92,160	23.0	30,830	9,400	40,230	35,940	76,170	47.2
	97.0	1,224,990	922,070	101,580	1,023,650	295,780	1,319,430	22.4	694,260	113,500	807,760	394,330	1,202,090	32.8
Sec. 18 SW¼	5.6	84,350	38,850	6,160	45,010	9,100	54,110	16.8						
" 23 S½ of N½ and N½ of S½	8.0	107,220	24,130	5,430	29,560	21,610	51,170	42.2						
" 24 SW¼ and W½ of SE¼, and S½ of NW¼	8.0	130,050	107,000	9,200	116,200	9,900	126,100	7.9						
" 25 E½ of W½ and W½ of E½	8.0	129,280	122,450	4,260	126,710	17,680	144,390	12.2						
" 30 & 31 - SE¼ of 30; NE¼ of 31	4.0	61,750	63,050	7,520	70,570	25,390	95,960	26.5						
" 32 N½	8.0	148,330	110,980	17,280	128,260	26,650	154,910	17.2						
" 33 NW¼	5.0	39,780	28,060	4,370	32,430	3,100	35,530	8.7						
	143.65	1,925,750	1,416,590	155,800	1,572,390	409,210	1,981,600	20.7						

The decrease in the stand on the proposed sale area since 1928 of 32.8% as obtained from the log grading strips compares favorably with the estimate of 31.36% by the Bureau of Entomology. Taking into consideration the decrease in the stand since 1914 (45%) when the last 5% cruise was made, the remainder of the stand on the proposed sale area is shown as follows:

ESTIMATED STAND AND CUT

Species	1914 cruise M ft	Estimated loss 45% M ft.	1936 Total net stand M ft.	Marking %	Estimated Leave M ft.	Est. Unutilized M ft.	Est. Utilized M ft.	% by species
P. P.	293,610	132,124	161,486	86.86	21,219	5,232	135,035	99.7
I. C.	553	-	553	80.00	111	-	442	.3
Total	294,163	132,124	162,039		21,330	5,232	135,477	100.0

SUSTAINED YIELD POSSIBILITIES:

Recent rough calculations indicate that on the basis of present stand the government timber in the whole western Modoc region might provide a sustained yield of approximately 10,000 M feet B.M. However, in a region where from 30% to 50% of the stand has been insect killed during the past 15 years, sustained yield appears to be hopeless, and it is strongly recommended that an attempt be made to sell this timber without restriction of annual out.

OPERATING METHODS:

The clause requiring milling in Modoc county has been continued. Possible milling sites; old Grimmett mill a few miles west of the Great Northern Railway, now operating; a 40,000-foot mill being constructed at Canby; or the rehabilitation of the Pickering mill at Alturas. Impossibility of obtaining transit rates on logs over the Southern Pacific R. R. practically eliminates Alturas as a milling center.

Millsite at Hackamore particularly recommended because of nearness to working area, transportation to California and eastern markets, convenience to remainder of private and government timber now excluded from sale area, and return of higher stumpage value to the government. Next choice, Perez, for much the same reasons.

Tractor and truck logging recommended because of existing Pickering railroad grades (8 miles) and the FS road system (23 miles) which is largely usable without much improvement.

MARKETS:

Lumber will be manufactured on the Klamath Falls-Alturas branch of the Southern Pacific R.R. and is accessible to Eastern and California markets though the rates to the latter are higher than for other plants in the region.

INVESTMENTS:

Investment table based on the assumption of a 15,000 M ft. annual production over nine-year period, no main road construction, extra truck with tank and pump for fire and road sprinkling, and a woods working capital estimated at one-half the cost of delivering the annual production of 15,000 M. feet B.M. to the pond.

INVESTMENT TABLE

15,000 M per year - 182 days - 62 M per day - 9 years

	Initial investment	Depr. Period	Years in Use	Residual Value	Average annual depr.	Average annual investment
3 tractors and winches	28,000	4	9	0	7,000	17,500
2 arches	7,000	4	9	0	1,750	4,375
10 trucks and trailers	30,000	5	9	0	6,000	18,000
1 loading winch	3,500	5	9	0	700	2,100
1 grader	2,000	10	9	0	200	1,100
1 trailbuilder	1,800	4	9	0	450	1,125
1 water tank and pump	600	10	9	0	60	330
Miscellaneous	1,000	2	9	0	500	750
Total woods investment	73,900				16,660	45,280
Working capital	55,000					55,000
						100,280

Wood depreciation $\frac{16660}{15000}$ = $1.11 per M feet

Margin for profit and risk on woods investment = $\frac{10\% \times 100,280}{15,000}$ = $.67 per M ft.

OPERATING COSTS:

Operating costs have been based upon regional averages for 1932-33-34. The whole area is ideally suited to tractor and arch logging with truck haul to Hackamore approximating nine miles. Trucks impractical in wet weather season and roads should be wet down daily in dry summer season.

Snags averaged 4½ per acre on the log grading strips run with only 6.75 cut trees. The cost of snag disposal at this rate is about $.25 per MBM, somewhat excessive. Due to the great number of already standing and fallen snags on the area, the relative level topography, the network of working roads, there seems little justification in snag falling except within 200 feet of roads.

The fire hazard cannot be greatly increased over what it now is due to the scattered stand and tops which will accumulate during logging and therefore fire protection is deemed sufficient if by the firebreak method rather than brush piling.

DISTRIBUTION OF MARKED MATERIAL AND SELLING PRICE BY D.I.B. GROUPS

1932-33-34 Regional Average Selling Price

Susanville Mill Scale Study

128 acres of Log Grading — Volumes in Decimal C Scale

D.I.B. Groups	6 - 9	10-13	14-17	18-21	22-25	26-29	30-33	34-37	38-41	42-45	46-49	Total or Average
					PONDEROSA PINE							
# 1 logs - volume					1182	1994	3572	2802	1065	436		11051
Selling price					23.082	24.221	25.625	27.189	26.475	26.345		
# 2 logs - volume				1327	2665	2657	3605	1716	924	548	180	13622
Selling price				19.369	19.653	19.733	20.855	21.969	20.942	20.459	19.843	
#3 logs - volume	20	1635	8456	16976	17788	14191	11590	4797	2052	152	166	77823
Selling price	21.423	19.356	18.119	17.494	17.455	17.454	18.252	18.919	17.922	17.682	17.597	
Total gross volume	20	1635	8456	18303	21635	18842	18767	9315	4041	1136	346	102496
Cull percent	0	.7	1.5	2.3	3.1	3.9	4.35	4.75	5.15	5.55	5.95	3.43
Total Net Volume	20	1624	8329	17882	20964	18107	17951	8873	3833	1073	325	98981
Percent by D.I.B.	.02	1.64	8.41	18.07	21.18	18.29	18.14	8.96	3.88	1.08	.33	100.0
Average selling price	21.423	19.356	18.119	17.630	18.033	18.492	20.155	21.969	20.867	22.346	18.765	18.970

DISTRIBUTION OF OPERATING COSTS AND SELLING PRICES BY LOG D.I.B. GROUPS

1932-33-34 Regional Averages

D.I.B. Groups	6 - 9	10-13	14-17	18-21	22-25	26-29	30-33	34-37	38-41	42-45	46-49	Total or Average
Percent of material	.02	1.64	8.41	18.07	21.18	18.29	18.14	8.96	3.88	1.08	.33	100.00
Logging costs variable with D.I.B.												
Bucking	.741	.571	.440	.384	.291	.263	.251	.245	.240	.286	.375	.30
Tractor logging	3.613	2.746	2.086	1.636	1.321	1.096	.928	.826	.774	.751	.754	1.28
Trucking	1.455	1.255	1.150	1.103	1.083	1.078	1.058	1.030	1.003	.960	.901	1.08
												2.66
Logging costs fixed per M												
Tractor logging												.63
Road maintenance												.20
Trucking												.21
	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Total Direct Woods Costs	6.849	5.612	4.716	4.127	3.735	3.477	3.277	3.141	3.057	3.073	3.070	3.70
Manufacturing Costs												
Sawing - variable with D.I.B.	6.119	3.704	2.573	1.998	1.654	1.496	1.453	1.445	1.380	1.408	1.450	1.73
" fixed per M												.58
Yard and shipping												2.74
Planing												.60
General Expense												2.14
	6.06	6.06	6.06	6.06	6.06	6.06	6.06	6.06	6.06	6.06	6.06	6.06
Total Manufacturing (Lumber Tally)	12.179	9.764	8.633	8.058	7.714	7.556	7.513	7.505	7.440	7.468	7.510	7.79
Overrun	19.3	9.6	3.9	.7	-1.6	-4.4	-2.9	.7	-3.6	-4.8	-5.4	-1.03
Total Manufacturing (Log Scale)	14.530	10.701	8.970	8.114	7.591	7.224	7.295	7.558	7.172	7.110	7.104	7.71
Selling Cost	1.800	1.626	1.522	1.481	1.535	1.553	1.693	1.845	1.753	1.877	1.576	1.59
Total Direct Operating Cost	23.179	17.939	15.208	13.722	12.841	12.254	12.265	12.544	11.982	12.024	11.750	13.00
Average Selling Price	21.423	19.356	18.119	17.630	18.033	18.492	20.155	21.969	20.867	22.346	18.765	18.97

Recommended minimum log D.I.B. - 10 inches

ESTIMATED OPERATING COSTS FOR MARKED MATERIAL TO 10" D.I.B.

Regional Averages for 1932-33-34

		Cost per M feet B.M.
Logging costs - variable with D.I.B.		
Bucking		.30
Tractor logging		1.28
Trucking - 9 miles		1.08 2.66
Logging costs - fixed per M		
Tractor logging		.63
Road maintenance		.20
Trucking		.21 1.04
Total direct woods cost		3.70
Manufacturing costs:		
Sawing - variable with D.I.B.		1.75
fixed per M		.58
Yard and shipping		2.74
Planing		.69
General expense		2.14
Total Manufacturing (Lumber Tally)		7.79
Overrun - 1.03%		.08
Total Manufacturing (Log Scale)		7.71
Selling Cost		1.59
Total direct operating costs		13.00
Other costs:		
Felling and limbing		.49
Logging - fixed per Acre		.08
Slash and snag disposal		.25
Road Construction		.51
Woods equipment depreciation		1.11
Plant depreciation		.80
		3.24
Overturn		16.24
Average selling price		18.97
Margin for profit, risk and stumpage		2.75
Margin for profit and risk - woods	.67	
Manufacture - 13% of $9.57	1.24	1.91
Indicated average stumpage value		.82

RECOMMENDATIONS:

The preceding calculations indicate a stumpage value of only $.82 per M feet B.M. It is recommended that the area be advertised for sale at the minimum rates, as follows:

Ponderosa pine	$2.00 per M feet B.M.
Other species.	.50 " " " " "
Unmerchantable material. .	.50 " " " " "

TIMBER SALE AGREEMENT

ACREAGE: 26,000

LOCATION: All or parts of Sections 25, 26, 27, 28, 29, 31, 32, 33, 35; T45N: R8E
All of T44N: R8E
All of Sections 6, 7, 30; T44N; R8E

MARKED FOR SALE:
Ponderosa Pine 135,000 MBM
Incense Cedar 500 MBM

STUMPAGE RATES:
Redeterminations allowed by permission Secretary of Agriculture

DATES OF CUTTING:
Cutting and removal of timber to begin not later than 7/1/37
At least 20,000MBM shall be cut prior to 7/1/39
50,000 7/1/42
80,000 7/1/45
110,000 7/1/48

MERCHANTABLE LOGS:
Ponderosa pine - not less than 10' long and at least 10" DIB at small end, and contains at lest 40 bd.ft. merchantable scale, and scaling 33-1/3% of gross scale after deductions for defect.

Other species - not less than 12' long and 10" DIB at small end, contains at least 40 bd. ft. merchantable scale, and scaling 50% of gross scale after deduction for defect;

Provided that curve and sweep in logs over 16' in length and firm blue stain shall not be regarded as defects.

INSECT CONTROL:
15d. It is agreed that the Forest Supervisor may require the purchaser to log, not to exceed 1000 M feet B.M. in any one year of pine timber which has either been attacked by tree killing beetles or is particularly susceptible to such attack, in accordance with the following conditions:

(1) All areas selected for this type of logging during any logging season shall be designated by the Forest Supervisor not later than June 15 of each year.

(2) All areas selected for logging shall average not less than 320 acres in area.

(3) On all areas at least an average of 400 feet B.M., net scale, per acre of pine timber shall be marked for cutting.

(4) No trees shall be marked for cutting which are less than 20 inches in diameter at breast height measured outside the bark.

(5) The logging shall be done during that part of the regular logging season which, in the opinion of the Forest Supervisor, is best adapted to securing effective insect control.

(6) Logging shall follow the marking of the timber as closely as possible, in order to secure the maximum insect control benefit and minimum deterioration in log value due to blue stain.

(7) Timber shall not be marked for logging which is more than 6,000 feet from a constructed road or railroad.

(8) All pine logs shall be considered as merchantable under the terms of this section of this agreement which are not less than 10 feet long, at least 10 inches in diameter inside the bark at the small end, and after deductions for visible indications of defect, scale 60 percent of their gross scale; Provided, That sweep in logs over 16 feet in length shall not be regarded as a defect, and blue stain extending more than two feet into the log from either end shall be regarded as a defect.

(9) If, at the end of any reappraisal period it is shown to the satisfaction of the Regional Forester that the cost of the above insect control measures is prohibitive to the purchaser, then hemay, at his option, cancel, or demand mutually satisfactory modifications of this section.

15.e. Any trees on that portion of the sale area where logging is in progress which become infested with insects during the life of this agreement shall be disposed of at such times and in such manner as may be required by the Forest Officer in charge.

BRUSH DISPOSAL:

By firebreaks.

MILLING:

To be done in Modoc County. Mill must be operated by internal combustion engines if on sale area, and must be band mill.

RESEARCH FACILITIES:

28. The purchaser agrees that the Regional Forester may designate one or more tracts, not exceeding a total of 1,500 acres within this sale area, upon which forest insect and silvicultural research studies may be conducted by the California Forest & RangeExperiment Station and the United States Bureau of Entomology and Plant Quarantine, and where special timber marking and cutting requirements may be carried out; Provided, That such tracts or tract shall not be located so as to result in material interference with the approved plan of logging operations in the judgement of the Forest Supervisor, and, Provided further, That such studies shall not interfere with insect-control work within this sale area.